AMENDMENT

Please amend the above-captioned application as follows:

In The Claims:

Please amend the following claims:

51. (Amended) A method for *in situ* or *in vivo* imaging of a cell, a tissue, an organ or a full body comprising administration of a pharmaceutical formulation in an amount sufficient to enhance the image,

wherein the pharmaceutical formulation comprises a composition comprising a chimeric molecule and a pharmaceutically acceptable excipient, wherein the chimeric molecule comprises a first domain comprising a fluorescent, bioluminescent or chemiluminescent polypeptide, or a heterologous kinase, and a second domain comprising a member selected from the group consisting of an RGD motif-comprising polypeptide; a selectin-binding polypeptide; a matrix metalloproteinase (MMP)-binding polypeptide, and a chondroitin sulfate proteoglycan-binding polypeptide, and the formulation is suitable for administration as an imaging enhancing agent and the chimeric molecule is present is an amount sufficient to enhance a computer assisted tomography (CAT) image, a magnetic resonance spectroscopy (MRS) image, a magnetic resonance imaging (MRI) image, a positron emission tomography (PET) image, a single-photon emission computed tomography (SPECT) image or a bioluminescence image (BLI),

wherein the image is generated by computer assisted tomography (CAT), magnetic resonance spectroscopy (MRS), magnetic resonance imaging (MRI), positron emission tomography (PET), single-photon emission computed tomography (SPECT), bioluminescence imaging (BLI) or equivalent.

52. (Amended) A method for *in situ* or *in vivo* imaging of a cell, a tissue, an organ or a full body comprising the following steps:

(a) providing a pharmaceutical formulation comprising a chimeric molecule and a pharmaceutically acceptable excipient, wherein the chimeric molecule comprises a first domain comprising a fluorescent, bioluminescent or chemiluminescent polypeptide, or a heterologous kinase, and a second domain comprising a member selected from the group consisting of an

RGD motif-comprising polypeptide; a selectin-binding polypeptide; a matrix metalloproteinase (MMP)-binding polypeptide, and a chondroitin sulfate proteoglycan-binding polypeptide, and the formulation is suitable for administration as an imaging enhancing agent and the chimeric molecule is present is an amount sufficient to enhance a computer assisted tomography (CAT) image, a magnetic resonance spectroscopy (MRS) image, a magnetic resonance imaging (MRI) image, a positron emission tomography (PET) image, a single-photon emission computed tomography (SPECT) image or a bioluminescence image (BLI);

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(b) providing an imaging device

wherein the imaging device is a computer assisted tomography (CAT) device, a magnetic resonance spectroscopy (MRS) device, a magnetic resonance imaging (MRI) device, a positron emission tomography (PET) device, a single-photon emission computed tomography (SPECT) device, a bioluminescence imaging (BLI) device or equivalent;

(c) administering the pharmaceutical formulation in an amount sufficient to generate the cell, tissue or body image; and,

(d) imaging the distribution of the pharmaceutical formulation of step (a) with the imaging device, thereby imaging the cell, tissue or body.

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59. (Amended) A method for *in vivo* imaging a tumor neovasculature in an individual comprising the following steps:

(a) providing a pharmaceutical formulation comprising a chimeric molecule and a pharmaceutically acceptable excipient, wherein the chimeric molecule comprises a first domain comprising a fluorescent, bioluminescent or chemiluminescent polypeptide, or a heterologous kinase, and a second domain comprising a member selected from the group consisting of an RGD motif-comprising polypeptide; a selectin-binding polypeptide; a matrix metalloproteinase (MMP)-binding polypeptide, and a chondroitin sulfate proteoglycan-binding polypeptide, and the formulation is suitable for administration as an imaging enhancing agent and the chimeric molecule is present is an amount sufficient to enhance a computer assisted tomography (CAT) image, a magnetic resonance spectroscopy (MRS) image, a magnetic resonance imaging (MRI) image, a positron emission tomography (PET) image, a single-photon emission computed tomography (SPECT) image or a bioluminescence image (BLI);

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(b) providing an imaging device

wherein the imaging device is computer assisted tomography (CAT), magnetic resonance spectroscopy (MRS), magnetic resonance imaging (MRI), positron emission tomography (PET), single-photon emission computed tomography (SPECT), bioluminescence image (BLI) or equivalent;

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(c) administering the pharmaceutical formulation in an amount sufficient to image the tumor neovasculature; and,

(d) imaging the distribution of the pharmaceutical formulation of step (a) with the imaging device, thereby imaging the tumor neovasculature.

Please add the following new claims:

--61. (NEW) A method for *in situ* or *in vivo* imaging of a cell, a tissue, an organ or a full body comprising administration of a pharmaceutical formulation in an amount sufficient to enhance the image,

wherein the pharmaceutical formulation comprises a chimeric molecule and a pharmaceutically acceptable excipient, wherein the chimeric molecule comprises a first domain comprising a bioluminescence imaging polypeptide and a second domain comprising an RGD motif-comprising polypeptide, and the formulation is suitable for administration as an imaging enhancing agent and the chimeric molecule is present is an amount sufficient to enhance a computer assisted tomography (CAT) image, a magnetic resonance spectroscopy (MRS) image, a magnetic resonance imaging (MRI) image, a positron emission tomography (PET) image, a single-photon emission computed tomography (SPECT) image or a bioluminescence image (BLI),

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wherein the image is generated by computer assisted tomography (CAT), magnetic resonance spectroscopy (MRS), magnetic resonance imaging (MRI), positron emission tomography (PET), single-photon emission computed tomography (SPECT), bioluminescence imaging (BLI) or equivalent.

62. (NEW) A method for *in situ* or *in vivo* imaging of a cell, a tissue, an organ or a full body comprising the following steps:

(a) providing a pharmaceutical formulation comprising a chimeric molecule and a pharmaceutically acceptable excipient, wherein the chimeric molecule comprises a first domain comprising a bioluminescence imaging polypeptide and a second domain comprising an RGD motif-comprising polypeptide, and the formulation is suitable for administration as an imaging enhancing agent and the chimeric molecule is present is an amount sufficient to enhance a computer assisted tomography (CAT) image, a magnetic resonance spectroscopy (MRS) image, a magnetic resonance imaging (MRI) image, a positron emission tomography (PET) image, a single-photon emission computed tomography (SPECT) image or a bioluminescence image (BLI);

(b) providing an imaging device

wherein the imaging device is a computer assisted tomography (CAT) device, a magnetic resonance spectroscopy (MRS) device, a magnetic resonance imaging (MRI) device, a positron emission tomography (PET) device, a single-photon emission computed tomography (SPECT) device, a bioluminescence imaging (BLI) device or equivalent;

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(c) administering the pharmaceutical formulation in an amount sufficient to generate the cell, tissue or body image; and,

(d) imaging the distribution of the pharmaceutical formulation of step (a) with the imaging device, thereby imaging the cell, tissue or body.

63. (NEW) A method for *in vivo* imaging a tumor neovasculature in an individual comprising the following steps:

(a) providing a pharmaceutical formulation comprising a chimeric molecule and a pharmaceutically acceptable excipient, wherein the chimeric molecule comprises a first domain comprising a bioluminescence imaging polypeptide and a second domain comprising an RGD motif-comprising polypeptide, and the formulation is suitable for administration as an imaging enhancing agent and the chimeric molecule is present is an amount sufficient to enhance a computer assisted tomography (CAT) image, a magnetic resonance spectroscopy (MRS) image, a magnetic resonance imaging (MRI) image, a positron emission tomography (PET) image, a single-photon emission computed tomography (SPECT) image or a bioluminescence image (BLI);

(b) providing an imaging device

wherein the imaging device is computer assisted tomography (CAT), magnetic resonance spectroscopy (MRS), magnetic resonance imaging (MRI), positron emission tomography (PET), single-photon emission computed tomography (SPECT), bioluminescence image (BLI) or equivalent;

(c) administering the pharmaceutical formulation in an amount sufficient to image the tumor neovasculature; and,

(d) imaging the distribution of the pharmaceutical formulation of step (a) with the imaging device, thereby imaging the tumor neovasculature.

64. (NEW) A method for *in situ* or *in vivo* imaging of a cell, a tissue, an organ or a full body comprising administration of a pharmaceutical formulation in an amount sufficient to enhance the image,

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wherein the pharmaceutical formulation comprises a chimeric molecule and a pharmaceutically acceptable excipient, wherein the chimeric molecule comprises a first domain comprising a bioluminescence imaging means and a second domain comprising an RGD motif-comprising polypeptide, and the formulation is suitable for administration as an imaging enhancing agent and the chimeric molecule is present is an amount sufficient to enhance a computer assisted tomography (CAT) image, a magnetic resonance spectroscopy (MRS) image, a magnetic resonance imaging (MRI) image, a positron emission tomography (PET) image, a single-photon emission computed tomography (SPECT) image or a bioluminescence image (BLI),

wherein the image is generated by computer assisted tomography (CAT), magnetic resonance spectroscopy (MRS), magnetic resonance imaging (MRI), positron emission tomography (PET), single-photon emission computed tomography (SPECT), bioluminescence imaging (BLI) or equivalent.

65. (NEW) A method for *in situ* or *in vivo* imaging of a cell, a tissue, an organ or a full body comprising the following steps:

(a) providing a pharmaceutical formulation comprising a chimeric molecule and a pharmaceutically acceptable excipient, wherein the chimeric molecule comprises a first domain comprising a bioluminescence imaging means and a second domain comprising an RGD motif-comprising polypeptide, and the formulation is suitable for administration as an imaging enhancing agent and the chimeric molecule is present is an amount sufficient to enhance a computer assisted tomography (CAT) image, a magnetic resonance spectroscopy (MRS) image, a magnetic resonance imaging (MRI) image, a positron emission tomography (PET) image, a single-photon emission computed tomography (SPECT) image or a bioluminescence image (BLI);

(b) providing an imaging device

wherein the imaging device is a computer assisted tomography (CAT) device, a magnetic resonance spectroscopy (MRS) device, a magnetic resonance imaging (MRI) device, a positron emission tomography (PET) device, a single-photon emission computed tomography (SPECT) device, a bioluminescence imaging (BLI) device or equivalent;

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(c) administering the pharmaceutical formulation in an amount sufficient to generate the cell, tissue or body image; and,

(d) imaging the distribution of the pharmaceutical formulation of step (a) with the imaging device, thereby imaging the cell, tissue or body.

66. (NEW) A method ~~for *in*~~ *vivo* imaging a tumor neovasculature in an individual comprising the following steps:

(a) providing a pharmaceutical formulation comprising a chimeric molecule and a pharmaceutically acceptable excipient, wherein the chimeric molecule comprises a first domain comprising a bioluminescence imaging means and a second domain comprising an RGD motif-comprising polypeptide, and the formulation is suitable for administration as an imaging enhancing agent and the chimeric molecule is present is an amount sufficient to enhance a computer assisted tomography (CAT) image, a magnetic resonance spectroscopy (MRS) image, a magnetic resonance imaging (MRI) image, a positron emission tomography (PET) image, a single-photon emission computed tomography (SPECT) image or a bioluminescence image (BLI);

(b) providing an imaging device

wherein the imaging device is computer assisted tomography (CAT), magnetic resonance spectroscopy (MRS), magnetic resonance imaging (MRI), positron emission tomography (PET), single-photon emission computed tomography (SPECT), bioluminescence image (BLI) or equivalent;

(c) administering the pharmaceutical formulation in an amount sufficient to image the tumor neovasculature; and,

(d) imaging the distribution of the pharmaceutical formulation of step (a) with the imaging device, thereby imaging the tumor neovasculature.

A3 concludes

67. (NEW) The method of claim 51, claim 52, or claim 59, wherein the RGD motif-comprising polypeptide comprises a sequence as set forth in SEQ ID NO:1.

68. (NEW) The method of claim 61, claim 62, or claim 63, wherein the RGD motif-comprising polypeptide comprises a sequence as set forth in SEQ ID NO:1.

69. (NEW) The method of claim 64, claim 65, or claim 66, wherein the RGD motif-comprising polypeptide comprises a sequence as set forth in SEQ ID NO:1.--